

**The Voluntary Adoption of Green Electricity  
by Ontario-Based Businesses:  
A Summary Report**

**by**

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## **Abstract**

This paper is a summary of the findings from the research that was conducted for my Master's of Environmental Studies thesis in the Department of Environment and Resource Studies at the University of Waterloo. The summary explores the contextual factors that promote and inhibit firms' motivations to adopt a voluntary environmental initiative that is good for the environment but does not provide a clear competitive or legitimating benefit to the firm itself. Using green electricity (e.g., wind, solar, small hydro, and biomass) as an example of such an initiative, the study uses qualitative research to investigate the willingness of 20 Ontario businesses to voluntarily adopt green electricity for at least a portion of their total electricity requirements.

Although the corporate ecological responsiveness literature that was reviewed in the thesis revealed that external factors (e.g., economic, government, infrastructure), organizational factors (e.g., industry cohesion), and individual factors (e.g., leadership, individual interest, manager discretion) can all affect the types of environmental projects that firms will adopt, in this case of green electricity the external factors were the more significant obstacles to it being perceived as a viable means to improve corporate environmental performance. In firms currently using green electricity, these obstacles were largely overcome by the successful efforts of an internal champion motivated primarily by individual values. An important aspect of the champion's success is her ability to attach her personal interest to a tangible business issue. This task is in turn aided by proactive or sustaining corporate environmental strategies that formalize continual environmental improvement processes and are predisposed to evaluating the success of an initiative on more than its financial or legitimizing contribution to the firm.

Based on these findings, the summary concludes that the two most important factors associated with the willingness of these firms to adopt an initiative that is good for the environment but not necessarily good for the firm are the development of decision-making criteria that extend beyond the bottom-line and the capability of concerned individuals to legitimize the initiative within the firm.

## Table of Contents

<b>Abstract</b> .....	ii
<b>Table of Contents</b> .....	iii
<b>1. INTRODUCTION</b> .....	1
1.1 Sustainable Industrialism .....	1
1.2 Canadian Electricity Choices and the Environment .....	2
1.3 Green Electricity in Ontario .....	3
<b>2. RESEARCH METHOD</b> .....	4
2.1 Participant Selection .....	4
2.2 Data Analysis .....	5
<b>3. FINDINGS</b> .....	6
3.1 Motivation .....	6
3.2 Contextual Factors Promoting Green Electricity .....	7
3.3 Contextual Factors Inhibiting Green Electricity .....	8
<b>4. DISCUSSION</b> .....	9
4.1 External Factors .....	9
4.1.1 Location .....	10
4.2 Organizational Factors .....	10
4.2.1 Industry .....	10
4.2.2 Non-Financial Measures and Proactive Decision-Making .....	11
4.2.3 External Legitimization of a Pollution Prevention Program .....	12
4.3 Individual Factors .....	13
4.3.1 Individual Concern and Tangible Links to Corporate Values .....	13
4.4 The “Caring Profile” .....	14
4.5 Typical Decision-Making Process .....	15
4.6 Policy Implications .....	18
4.7 Conclusion .....	20
<b>Acknowledgements</b> .....	21
<b>Endnotes</b> .....	22

## 1. INTRODUCTION

This paper presents a summary of the findings from the research that was completed for my Master's of Environmental Studies thesis in the Department of Environment and Resource Studies at the University of Waterloo. This research was supervised by Professor Ian H. Rowlands at the University of Waterloo. A complete copy of the thesis, titled *The Voluntary Adoption of Green Electricity by Ontario-Based Businesses*, can be found on the Business and Green Power in Electricity Transformation: Markets and Policies website.<sup>i</sup>

This summary is presented in four main sections. The first section introduces the concept of sustainable industrialism and provides a background of the Canadian and Ontario green electricity (GE) markets. Next, the summary takes a brief look at the research method used by the thesis to collect and analyze primary data. In section three, the main findings from the research are presented. In the final section, the findings presented in section three are discussed in greater analytical depth and policy recommendations based on the analysis are presented.

### 1.1 Sustainable Industrialism

The production, distribution, and disposal of goods and services in the modern industrialized economy have imposed a heavy toll on the natural environment, particularly since the 1950s. Climate change, soil erosion, air and water pollution, and the loss of biological diversity are but a few examples of the negative impacts of modern industrialism. These in turn place strains on socio-economic systems that are - despite our modernity - reliant upon the health of ecosystems for personal security and well-being. The irony of modern industrialism is that although it has placed an ever greater burden on the natural environment, it has simultaneously generated historically unprecedented levels of wealth, innovation, and personal well-being for a large portion of the world's human population.

In recent years, a number of business representatives, government officials, non-governmental organizations' leaders, and academic analysts have started to argue that industrialism does not have to lead to the degradation of natural systems. However, in order for this to happen, businesses, governments, and individuals need to ensure that their collective impact, including overall material and energy throughputs, do not exceed the capacities of environmental systems. That is, we need to ensure that we do not use more than the natural

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<sup>i</sup> Business and Green Power in Electricity Transformation: Markets and Policies, <http://www.fes.uwaterloo.ca/research/greenpower/>.

environment is able to renewably generate, nor can we create more waste than can be assimilated back into the natural system without degrading its regenerative capabilities.

A major actor in this more sustainable model of industrialism, particularly in the liberal-capitalist context, is the business community because it produces and distributes the bulk of the goods and services that are eventually consumed and discarded by society. The adoption of sustainable material and energy practices by businesses, therefore, is an integral part of sustainable industrialism. However, “what happens when what’s good for the environment is not good for the company”?<sup>1</sup> Until the 1980s, this question would have been answered with two words - government regulation. Since the 1990s, though, governments have increasingly favoured voluntary environmental initiatives (VEI) over traditional “command-and-control” legislation.<sup>ii</sup>

If the movement toward sustainable industrialism is a desired societal outcome and if governments are increasingly reliant upon the voluntary actions of businesses to improve their environmental performance, then it is worthwhile to understand what factors are influencing companies to improve their environmental performance voluntarily.

In order to study the factors that influence firms to voluntarily adopt an environmental initiative that is good for the environment but not necessarily good for the company, this study uses the adoption of GE as a means to investigate how companies make decisions regarding such initiatives. More specifically the research was directed by the following question: What factors promote and inhibit the voluntary use of green electricity by Ontario-based firms? GE, while good for the environment, costs more to use, does not improve a firm’s efficiency and is arguably not a standard environmental practice for most firms. By investigating the factors that have influenced firms to voluntarily adopt GE, it is the aim of this study to develop a better understanding of what is leading some firms to develop more sustainable practices. From this knowledge, it may then be possible to determine some of the conditions that are necessary for the broader business community to move more rapidly from modern industrialism to sustainable industrialism.

## **1.2 Canadian Electricity Choices and the Environment**

Electricity generation in Canada is presently dominated by three methods of production: hydro (61%); nuclear (12%); and thermal (26%) e.g., coal, natural gas and oil.<sup>2</sup> The majority of

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<sup>ii</sup> Citations have only been provided in this summary for figures and quotations. Full citations for additional referenced materials can be found in the study’s thesis. Please see footnote i for information on where copies of the complete thesis can be obtained.

this generation - 66.6% - was consumed by the business sector (37.7% manufacturing; 22% commercial and institutional; 6.9% mining, oil and gas extraction).<sup>3</sup>

Each of Canada's three main sources of electrical power generation – hydro, nuclear, and thermal – are linked to a unique set of potentially harmful environmental and social impacts. For large hydro-electricity projects, the problems include ecosystem damage caused by upstream flooding, rises in release water temperature, lower downstream water tables, sediment build-up, and human population resettlement. Issues associated with nuclear generation arise from its reliance on highly radioactive inputs which cause both long-term disposal concerns and immediate security risks. For electricity generated from fossil fuels, environmental and social concerns are linked to its emissions which include sulphur oxide (SO<sub>x</sub>), nitrogen oxide (NO<sub>x</sub>), volatile organic compounds (VOC), methane (CH<sub>4</sub>), and carbon dioxide (CO<sub>2</sub>). The cumulative effect of these gases contributes to negative environmental and social impacts at all geographic scales: local, regional and global.

GE is generally considered to be electricity that has been generated by more environmentally sustainable means. In 2002, GE accounted for less than 1% of Canada's electricity generation.<sup>4</sup> The country's total installed green electricity generation falls well behind the industry's global leaders. In wind generation, for example, Canada's installed capacity was only 313 MW of electricity in 2002<sup>5</sup>, compared to countries such as Germany, Spain, the United States, and India which had installed wind capacities of 12,000 MW, 4,820 MW, 4,685 MW, and 1,702 MW respectively in the same year.<sup>6</sup>

The purchasing of GE by firms in Canada is a voluntary environmental initiative because it is not required by regulation and it leads to a reduction in an organization's environmental impact by reducing greenhouse gas (GHG) emissions, improving local air quality, preventing long-term hazardous waste, and minimizing ecosystem disturbances. At present there are no environmental regulations in Canada that require companies to purchase GE, nor is there the prospect of such a regulation in the near future.

For further information on the environmental consequences of electricity choices in Canada and existing federal legislation that is related to GE please see section 1.3.3 and section 1.3.4 of the thesis.

### **1.3 Green Electricity in Ontario**

In 2004, the Government of Ontario announced a renewable portfolio standard (RPS) for the province. An RPS is a goal set by a government to have a specific percentage of its jurisdiction's electricity portfolio supplied by green sources. At the time of the announcement,

GE accounted for approximately one percent of Ontario's electricity portfolio. The bulk of the province's electricity portfolio, meanwhile, was made up of nuclear power (48%), hydro (25%), and thermal sources (17% coal, 8% natural gas, 1% oil). The RPS commits the government to increasing the percentage of new GE to 5% (1,350 MW) of the provincial electricity portfolio by 2007 and 10% (2,700 MW) by 2010.<sup>7</sup>

Although the RPS is a potential boon to new GE development in Ontario, there has been no effort made by the government to develop a simultaneous demand market for the product. At present, it appears that almost all of the new GE will be pooled with conventional electricity and sold as a single commodity. Additional information concerning the Province of Ontario's GE initiatives can be found in section 1.3.5 of the thesis.

## **2. RESEARCH METHOD**

The research for this study was conducted during two sets of interviews. A preliminary set of interviews was held with 12 representatives from 11 different organizations that were either currently selling a GE product in Canada or that promoted it in the past. These interviews were held between June 2004 and October 2004. A second set of interviews was held with 20 Ontario-based companies. Half of these companies had voluntarily adopted GE and the other half had not voluntarily adopted GE. These interviews were held between November 2004 and April 2005. Although the methods and results from both sets of interviews are discussed in chapter three of the thesis, only the methods and findings from the second set of interviews are reviewed in this summary. A complete discussion of the methods used to conduct the second set of interviews can be found in section 3.3 of the thesis.

### **2.1 Participant Selection**

The research took place in Ontario. Twenty-three representatives from 20 different Ontario-based businesses were interviewed for the study. Nineteen of the 20 interviews were held face-to-face at each participant's place of work. The one interview that was not conducted face-to-face was held by telephone as per the interviewee's request. Each interview was between 45 minutes and two hours in duration.

Each interview was structured around three main topics: 1) the company's general approach to making decisions that affect its social and environmental performance, 2) the company's electricity procurement and usage, and 3) the real (for firms using GE) or potential (for firms not using GE) voluntary use of GE by the company.

Purposive sampling was used to select the study's initial list of subjects for the interviews. Purposive sampling is a nonprobabilistic method that intentionally seeks subjects to be included in the study based on their ability to meet specified criteria. The specific criteria used by this study are discussed below. This intentional sampling contrasts with random sampling techniques preferred by deductive research approaches.

Firms that participated in the study fell into one of two groups. The first group consisted of companies based in Ontario that were voluntarily using GE either at the time of the study or had done so in the past. These companies will be referred to as "users" for the remainder of the summary. The second group of companies was selected by "matching" each user firm with a company that was from a similar industry sector, was similar in size, had a similar environmental performance record, and was based in Ontario but had never voluntarily used GE for any of its Ontario operations. This second group of companies will be referred to as "non-users" for the remainder of the summary.

Of the 18 user firms initially identified by the study, ten companies were selected to participate from eight different industry sectors. The eight industry sectors represented were: finance (two firms), engineering, retail, advertising agency, building materials and supplies wholesaler, construction, textile product mills, and automobile manufacturing (two firms). For each of the ten user firms that participated, a non-user firm twin was secured based on the "matching" criteria discussed above.

## **2.2 Data Analysis**

Transcripts made following the interviews were coded for analysis. These transcripts were based on tape recordings taken during 19 of the 20 interviews. One interview was not tape-recorded as per the request of the participant. In this case, hand written notes taken during the interview were used as transcripts. Eventually the data assigned to each code was isolated from the original transcripts and analyzed in relation to the other data that were given the same code. These isolated sets of coded data are called "sorted categories". After the sorted categories were satisfactorily split and spliced, the disaggregated information was put back into the context of the participating firms.

Information regarding the factors that promoted the voluntary adoption of GE needed to be condensed in order to analyze the links and connections between the possible factors and to understand how these factors influenced the decision by participating firms' to adopt GE. To do this a predictor-outcome matrix was used. A predictor-outcome matrix is most appropriate when the objective of the study is "to see how several contributing factors function *together* in relation

to different levels of a criterion measure” (emphasis in original).<sup>8</sup> The predictor-outcome matrix used by this study can be found on page 148 of the thesis.

### **3. FINDINGS**

The study’s findings are presented in three main categories: motivation, contextual factors promoting GE, and contextual factors inhibiting GE. The section on motivation explains why the study’s user firms decided to adopt GE as a voluntary initiative. The next two sections discuss the contextual factors that influenced the participating firms’ decision to adopt GE. Contextual factors in this sense are the variables that affect the types of decisions made by firms and the subsequent actions taken as a result of these decisions. Although the study was interested in learning why firms adopted GE, it was primarily interested in developing a better understanding of how different contextual factors influence a particular outcome. The outcome being studied in this case was whether or not a firm voluntarily decided to adopt GE. A detailed discussion of the study’s findings can be found in section four of this summary.

#### **3.1 Motivation**

For the majority of the firms using GE that participated in the study, the motivation to adopt the initiative was a blend of three different drivers: competitiveness, legitimation, and altruism (see table 1). Competitiveness, as it relates to the natural environment, is driven by the potential to gain a long-term competitive advantage over competitors by adopting proactive environmental initiatives. Legitimation, in contrast, explains environmental actions that are taken as a means to stay in step with broadly accepted norms, values, and beliefs. These norms, values, and beliefs can be perpetuated by interests external to the firm or ones that are generated within the firm itself. Finally, altruistic motivations are driven by the desire to do “the right thing to do.”

Legitimizing drivers were identified by eight of the ten user firms as at least one of their motivations for adopting GE. For three of these eight user firms, the adoption of GE was motivated by a mix of competitiveness, legitimation, and altruism. Four of these eight companies adopted it for a blend of external and/or internal legitimation and altruism. One firm indicated internal legitimation as its only driver.

Only one firm – a building supply wholesaler - was motivated by purely competitive drivers. Although this firm was also motivated by a desire to maintain its legitimacy with its potential retail customer, this link only existed in light of its intent to open a new market

opportunity for itself. The only other firm that was not motivated by either internal or external legitimation was an advertising agency which identified its motives as exclusively altruistic.

**Table 1: Summary of the Business Motivations for the Voluntary Use of Green Electricity**

<b>Competitive</b>	<b>External Legitimation</b>	<b>Internal Legitimation</b>	<b>Altruism</b>
<ul style="list-style-type: none"> <li>- Market opportunity (1 firm)</li> <li>- Corporate image (2 firms)</li> <li>- Customer relations (2 firms)</li> </ul>	<ul style="list-style-type: none"> <li>- Promotion (4 firms)</li> <li>- Leadership (2 firms)</li> <li>- ISO 14001 certification (1 firm)</li> <li>- Competitor influence (1 firm)</li> </ul>	<ul style="list-style-type: none"> <li>- Consistent with corporate values and/or policy (8 firms)</li> <li>- Reinforced environmental initiatives (4 firms)</li> </ul>	<ul style="list-style-type: none"> <li>- Supported GE development (7 firms)</li> <li>- Consistent with personal values (4 firms)</li> <li>- Local initiative (1 firm)</li> <li>- Community support (1 firm)</li> </ul>

My findings support the notion that GE is not predominately adopted for direct competitive gains. This suggests that the traditional “business case” for GE that is often put forward by its supporters did not resonate with the study’s participants. The traditional business case includes such benefits as stabilized energy costs, a hedge against future environmental regulations, and using on-site generation to help absorb part of the company’s peak demand for electricity (i.e., peak-shaving).

A more detailed discussion of the motivations identified by the study’s participants for adopting GE can be found in section 5.2 of the thesis.

### **3.2 Contextual Factors Promoting Green Electricity**

The contextual factors listed in Table 2 were identified by the study’s predictor-outcome matrix as the factors that influenced the user firms to adopt GE. It is important to note that not every user firm was influenced by every factor listed, but each factor listed did affect at least one of the ten user-firms included in the study. A factor that played almost no role in the decision of one firm may have been a key consideration for another firm. In short, there does not appear to be a definitive set of factors that one can point to and say with absolute certainty that a firm that exhibits these factors will voluntarily adopt GE.

What the analysis reveals is that for the user firms included in the study there are a number of common external, organizational, and individual factors that do appear to have positively influenced their decision to use GE and which differentiated each of them from their matching non-user firm(s). A closer investigation of Table 2 also reveals that organizational and individual factors were identified most readily by the participants as promoting their decision to

use GE. In fact, for eight of the ten user firms that participated in the study it was a blend of organizational and individual factors that played a key role in influencing their decision.

**Table 2: Summary of Contextual Factors Promoting the Business Use of Green Electricity**

<b>External Factors</b>	<b>Organizational Factors</b>	<b>Individual Factors</b>
<ul style="list-style-type: none"> <li>- Location of green electricity generation (2 firms)</li> <li>- Local initiative (2 firms)</li> <li>- Promotional resources of the green electricity retailer (1 firm)</li> <li>- Climate change (5 firms)</li> </ul>	<ul style="list-style-type: none"> <li>- Sustaining or proactive environmental strategy (6 firms)               <ul style="list-style-type: none"> <li>- “best practice”</li> <li>- public environmental metrics</li> <li>- public greenhouse gas metrics</li> <li>- inclusion of non-financial decision-making criteria</li> <li>- previous corporate support for green electricity</li> </ul> </li> <li>- Direct business connection to GE industry or retailer (2 firms)</li> <li>- Industry cohesion (2 firms)</li> </ul>	<ul style="list-style-type: none"> <li>- Champion and/or decision-maker has personal experience with green electricity (4 firms)</li> <li>- Top-level champion and/or support (8 firms)</li> <li>- Personal values of champion and/or decision-maker in line with green electricity attributes (9 firms)</li> <li>- Employee connection to environment and/or sustainability (1 firm)</li> </ul>

For a more detailed look at the factors that promoted the voluntary use of GE by the study’s participants, please see section 5.4 of the thesis.

### **3.3 Contextual Factors Inhibiting Green Electricity**

A look at the factors that inhibited the study’s 20 participants to voluntarily adopt GE shows that external and organizational influences were the strongest deterrents (see table 3). Although almost all of the study’s participants were in favour of further GE development in the province of Ontario, most maintained that the cost associated with GE was the most significant factor that inhibited its adoption. This premium price in turn met additional organizational resistance within firms whose environmental strategies were predominately efficiency-based. An efficiency-based strategy is one which focuses on attempting to “reduce costs and increase efficiencies by eliminating waste and by reviewing the procurement, production and distribution process”.<sup>9</sup> This strategy is in contrast to a proactive strategy that seeks “competitive leadership through spearheading environmentally friendly practices and processes” and a sustaining strategy where “environmental best practice is espoused and enacted because it is the right thing to do”.<sup>10</sup>

For more information about the factors that inhibited the voluntary use of GE by the study’s participants, please see thesis section 5.5.

**Table 3: Summary of Green Electricity Inhibitors**

<b>External Factors</b>	<b>Organizational Factors</b>
<p>Cost (17 firms)</p> <p>Green Electricity Commodity</p> <ul style="list-style-type: none"> <li>- Reliability of supply (2 firms)</li> <li>- Environmental impacts of installing new green electricity (1 firm)</li> <li>- Do not receive green electrons directly (2 firms)</li> <li>- Lack of local green electricity resources (1 firm)</li> </ul> <p>Green Electricity Process</p> <ul style="list-style-type: none"> <li>- Lack of transparency (3 firms)</li> <li>- Lack of availability (4 firms)</li> <li>- Supplier credibility (1 firm)</li> <li>- Lack of influence on generator (1 firm)</li> </ul> <p>Government</p> <ul style="list-style-type: none"> <li>- Should be implemented by government (1 firm)</li> <li>- Market instability (1 firm)</li> </ul>	<p>Efficiency-based environmental strategy (10 firms)</p> <p>Lack of a Business Case</p> <ul style="list-style-type: none"> <li>- No link to core business (4 firms)</li> <li>- Depletes resources for other initiatives (5 firms)</li> <li>- Similar to subsidizing or giving to charity (2 firms)</li> <li>- Competitors not using green electricity (1 firm)</li> <li>- Low public awareness (1 firm)</li> <li>- Minimal promotional value (4 firms)</li> <li>- Reputational risks (1 firm)</li> <li>- Greenwashing (1 firm)</li> <li>- Added administrative hassle (1 firm)</li> </ul>

**4. DISCUSSION**

In keeping with the study’s exploratory nature, the thesis developed a series of hypotheses based on its findings. These hypotheses, that explain the factors that promote the voluntary adoption of GE by the study’s participants, are introduced in this section and are then built into a model that describes the most common decision-making scenario that led the study’s user firms to adopt GE. Next, the broader implications of the study on public policy will be addressed. Finally, this section presents a brief conclusion of the study.

Specific hypotheses that explain the factors that inhibit firms from voluntarily adopting GE were not be developed in the thesis. The reason for this exclusion is because the majority of the inhibitors identified by the study were related to external systemic issues (e.g., premium price, distribution, and government) that were equally present for both the user and non-user firms. Therefore, they are not unique to the non-users. What is interesting from the perspective of this study is what factors influenced how firms responded to, and interpreted, these inhibitors.

**4.1 External Factors**

External factors encompass all the factors that exist outside of the firm’s industry, ranging from the natural environment to market influences and public perceptions of an issue.

The following discussion of the effect that external factors had on the willingness of some firms to adopt GE is taken from section 6.2 of the thesis.

#### **4.1.1 Location**

The location of GE generation was identified by three of the user firms and two of the non-user firms as influencing their decision to adopt the initiative. In each case, GE that was regionally generated or led by a local organization was preferred to a remote source. In the case of two of the user firms, they are waiting for local sources of GE to become available before they will recommit to it.

Although the study demonstrated that the attributes associated with location can vary from one company to the next, what was consistent with each of these attributes is that location is a factor that can both promote GE and inhibit its use. If it is generated close to a business that is deciding whether or not to adopt it, then its proximity may positively influence the decision. However, if it is not close to the facility, then the willingness of a firm to pay a premium for GE may be reduced. This relationship is expressed in Hypothesis 1:

*Hypothesis 1: Firms will be positively influenced to adopt green electricity when the green electricity is generated in close proximity to the firm's facilities.*

#### **4.2 Organizational Factors**

Organizational factors are ones that influence how a firm responds to an environmental issue. These factors are derived either from the processes and capabilities of a firm or from the industry in which it operates. The following look at organizational factors is taken from section 6.3 of the thesis.

##### **4.2.1 Industry**

Industry cohesion was found to affect the decision of several firms within the study to adopt GE. Cohesion in this sense refers to how closely connected companies within a particular industry are in terms of their geographic proximity and social networks. The companies from the finance and automobile manufacturing industries that participated in the study have a high level of cohesion because they are physically and socially in close proximity to the other major firms within their field. Participants in each of these sectors indicated that their decision to use or reject GE was partially influenced by other firms within their sector. No other sectors that participated in the study indicated that this was something that was taken into consideration.

Although the number of participants is too few from which to draw generalizations, it seems likely that field cohesion may play a role, particularly in industries where environmental performance is closely monitored. This is reflected in Hypothesis 2a:

*Hypothesis 2a: Firms that operate in more cohesive fields will be positively influenced to voluntarily adopt green electricity if competitors within its field begin to voluntarily use green electricity.*

Another industry related factor that played a role in the decision of some of the study's participants to use GE was a direct connection between the products and/or services of their business and the GE industry. This connection existed for two firms that participated in the study. Although this finding seems intuitive, evidence supporting it could not be found in the academic literature. The finding is expressed in Hypothesis 2b:

*Hypothesis 2b: Firms that have a financial business connection to the green electricity industry will be positively influenced to voluntarily adopt green electricity.*

#### **4.2.2 Non-Financial Measures and Proactive Decision-Making**

Another finding of this study was the tendency by most user firms to use proactive decision-making criteria that extended beyond financial measures. The clearest example of these criteria was the public disclosure of environmental performance metrics by five of the user firms. In addition to these five firms, three other user firms also indicated that non-financial factors were frequently used in decisions related to an environmental or social issue.

The finding that environmental metrics positively influenced the likelihood of user firms to adopt GE demonstrates the important influence that the integration of environmental information has on how firms approach decisions regarding voluntary environmental initiatives. However, in the case of GE, an important caveat appears to be the public dissemination of this information. An explanation for why the public tracking of environmental indicators – particularly greenhouse gas emissions - led to an increased likelihood of a firm voluntarily adopting GE is that it increases the certainty with which the firm's environmental performance can be attributed to its operations. This in turn increased the urgency of the environmental issue being measured which ultimately increased its salience to the firm.

The use of non-financial environmental criteria is particularly important in the case of GE because of the cost inhibitor associated with its premium price. The importance of such criteria is further demonstrated by the fact that environmental metrics helped a number of GE champions to legitimize the initiative. The influence of non-financial decision-making criteria is summarized in Hypothesis 3:

*Hypothesis 3: The voluntary adoption of green electricity will be positively influenced by the use of non-financial environmental decision-making criteria. The salience given to these criteria will be further increased by the public reporting of indicators that are linked to environmental issues associated with conventional electricity use (e.g., greenhouse gas emissions).*

#### **4.2.3 External Legitimization of a Pollution Prevention Program**

This study has also provided empirical evidence to support the hypothesis put forward by Hart that “[o]ver time, a pollution-prevention strategy will move from being an exclusively internal (competitive) process to an external (legitimacy-based) activity”.<sup>11</sup> Although almost all of the user and non-user firms interviewed by the study identified a link between their electricity use and their environmental performance, all but one of the non-user firms indicated that voluntary measures taken to reduce the environmental impacts that are connected to their firms’ electricity use had to be equated with cost savings (i.e., energy conservation or energy efficiency). The one exception to this electricity-efficiency criterion was the non-user automobile manufacturer. Although this firm did not use GE, it did participate in a community-based forest rejuvenation program as part of its efforts to neutralize its GHG emissions. This indicates that GE is not the only means by which firms in the study were externally legitimating their pollution prevention programs.

The use of public GHG emissions indicators by five of the user firms suggests that these firms, like the one non-user firm that participated in a forest rejuvenation program, have externalized their programs with stakeholders that exist outside of the organization and, therefore, are more likely to seek recognition for their actions. This outcome is supported by the fact that the majority of user firms in the study identified legitimation-based motives as at least one of their reasons for adopting GE. The relationship between a firm’s pollution prevention program and its propensity to use GE is provided in Hypothesis 4:

*Hypothesis 4: The presence of a mature pollution prevention program aimed at reducing the emissions of a firm that are generally associated with conventional electricity use (e.g., greenhouse gas emissions) will positively influence the firm's decision to voluntarily adopt green electricity.*

### **4.3 Individual Factors**

Individual factors address the role that people internal to the firm's decision-making (e.g., owners, directors, managers, and employees) play in developing its ecological responsiveness. The following discussion on the influence that individual factors have on a firm's willingness to voluntarily adopt GE is taken from section 6.4 of the thesis.

#### **4.3.1 Individual Concern and Tangible Links to Corporate Values**

This study also found that both the support of a high-level decision-maker and the commitment of an internal champion are important factors in a firm's decision to adopt GE.

A comparison of this study's user and non-user participants revealed that the environmental strategies for six of the user firms were more proactive than their matched non-user firm pair. The strategies of three of the remaining four matched-pair sets of firms were too similar to determine which had a more proactive strategy. Finally, the strategy for the matched-pair in the construction industry could not be directly compared because the user firm identified its decision to adopt GE as part of its social strategy and the non-user firm identified GE as an issue related to its environmental strategy. In addition to the comparison done by the study, five of the user firms have also been recognized by external sources as sustainability leaders in their industry. All of this is to say that firms with more integrated environmental strategies appear to be more likely to voluntarily adopt GE.

In addition to having an integrated environmental strategy, the internal legitimation of a firm's environmental strategy is also important for managers to recognize environmental issues as opportunities rather than threats. Since there are few external drivers promoting GE as a voluntary initiative, it seems evident that these drivers must come from within the firm. My study found that tangible links between the firm's environmental strategy and the personal interest of its managers in GE positively influenced the initiative to be recognized as an opportunity rather than as a threat to the firm. For a number of the participants, links that allowed them to align their personal interest in GE with the firm's broader values were formalized environmental processes that encouraged continual improvement such as the public reporting of

environmental indicators, setting environmental performance targets, a senior level environmental committee and a designated environmental department or senior manager.

For the non-user firms, the environmental strategy pursued was largely efficiency-based. In addition to the more bottom-line driven environmental values, many of these firms had fewer tangible links to formal processes that emphasized continual environmental improvement.

For a number of the study's participants, proactive or sustaining corporate environmental values positively influenced the ability of the champion to align their individual concern for the GE initiative with the firm's values. In addition to this, the values of the firm were further legitimized by formalized environmental processes that emphasized the importance of continual environmental improvement. This is expressed in Hypothesis 5:

*Hypothesis 5: The voluntary adoption of green electricity will usually be championed by an individual within the firm who supports the concept of more sustainable forms of energy and who may also have direct experience with alternative energy. Furthermore, the success of the championing effort will be enhanced if the firm has a formal process that facilitates continual environmental improvement.*

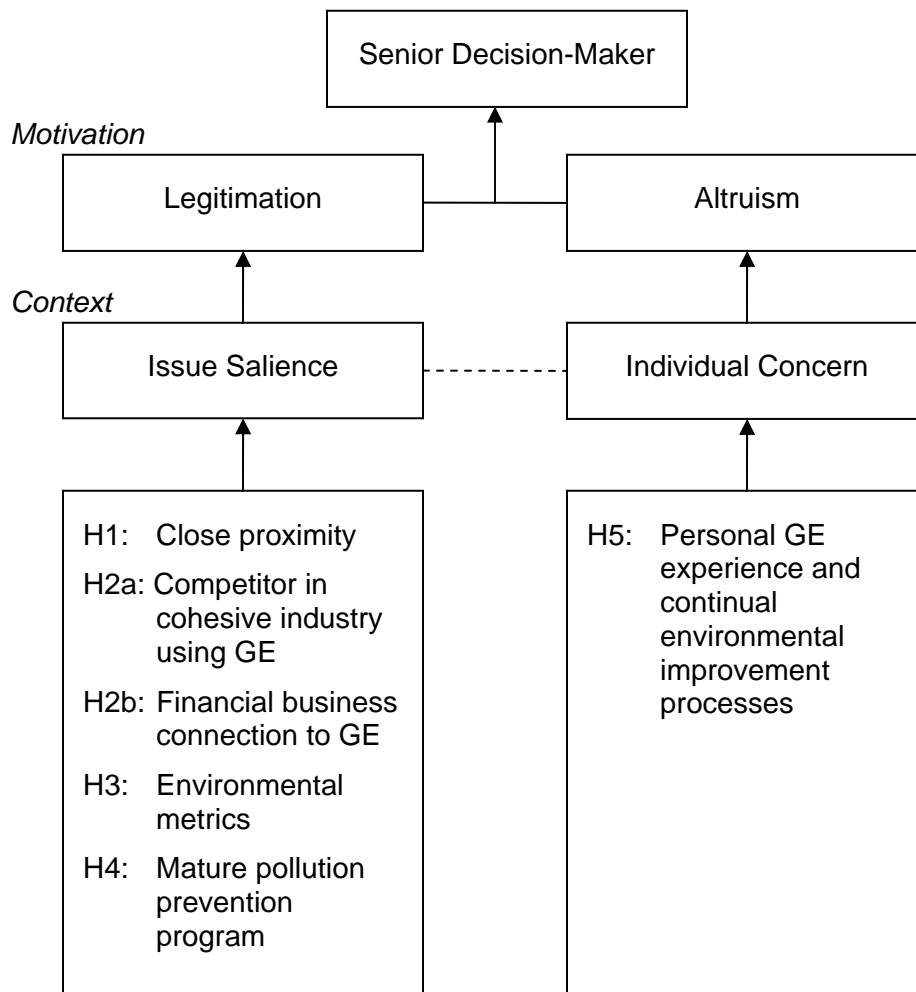
#### **4.4 The “Caring Profile”**

As noted in the above discussion, the decision to adopt GE was championed in most firms by a manager who demonstrated individual concern for GE and in some cases had direct experience with it (see figure 1). The ability of the manager to interpret the initiative as an opportunity for the firm rather than as a risk was enhanced by the presence of formalized environmental processes that emphasized continual environmental improvement. This is reflected in hypothesis 5.

Champions used a variety of instruments such as environmental indicators, ISO 14001 certification and benchmarking to link their individual concern with the firm's broader environmental strategy. These instruments are represented by hypotheses 1, 2a, 2b, 3, and 4. This approach increased the salience of GE in relation to the firm's broader environmental objectives, thereby legitimating it to senior management as a voluntary initiative.

This decision-making process closely resembles what Bansal and Roth have called the “caring profile”. In this profile, “[t]he ability of an individual to influence organizational change is heightened as ecological responsiveness is recognized as valid”.<sup>12</sup>

**Figure 1: The “Caring Profile” and the Voluntary Adoption of Green Electricity**



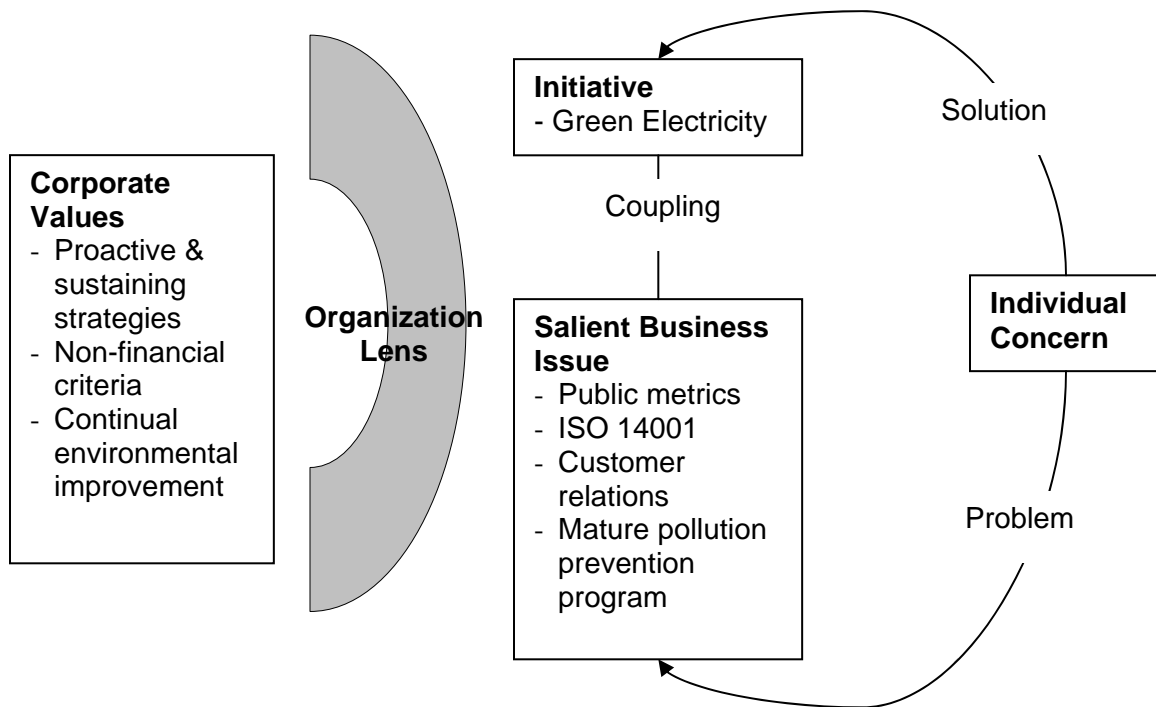
One should be careful, however, not to over generalize that all firms that voluntarily use GE fit the caring profile. Of the user firms included in my study, at least two – the advertising agency and the wholesale firm - do not fit this profile. For the advertising agency, the decision to use GE was strictly a personal one made by the firm’s owner to “do the right thing” and was not necessarily legitimated either internally or externally. At the other end of the spectrum, the decision by the wholesaler firm was purely a competitively driven one, intended to allow it to gain access to a specific market.

#### **4.5 Typical Decision-Making Process**

In terms of the decision-making process that most user firms followed when looking at GE as a potential voluntary initiative, what should be drawn from the study’s findings is that GE

was more likely to be adopted if it was: a) championed by a concerned individual; b) linked to an established business issue; and c) supported by sustaining or proactive corporate values (see figure 2).

**Figure 2: Typical Green Electricity Decision-Making Process Identified by User Firms**



The first of these three points has been well documented in the academic literature. This study demonstrates, however, how some champions are able to build a sense of urgency around a specific initiative by linking it to broader business issues such as customer relations, public performance indicators, and ISO certification. While it is unlikely that the urgency that surrounds a firm’s decision to adopt GE is viewed as high, this study demonstrates that champions, at least in some instances, are able to make it salient enough for decision-makers to view the initiative as a legitimate form of action.

The role played by the GE champion, whereby she couples a preestablished environmental solution - in this case GE – with an existing corporate issue or “problem” is similar to the role played by the “policy entrepreneur” in the formation of public policy. According to the public policy literature, the defining characteristic of policy entrepreneurs “is their willingness to invest their resources – time, energy, reputation, and sometimes money – in the

hope of a future return.” The return for most of the GE champions that participated in the study was the altruistic reward that came with the initiative being supported by their firm. What is particularly important to point out is that policy entrepreneurs do not necessarily solve problems. “Instead, they become advocates for solutions and look for current problems to which to attach their pet solution”.<sup>14</sup> This is a scenario that explains quite aptly how many of the GE champions built a sense of urgency around the initiative by linking it with an existing corporate issue.

This study also demonstrates that the organizational decision-making lens used by a firm to assess different environmental issues, or at least ones related to voluntary actions, may be just as important as the actual physical, spatial and emotive characteristics of the issue itself. The firms in my study that had sustaining or proactive strategies, included non-financial instruments in their decision to voluntarily adopt GE and had continual environmental improvement processes in place approached the decision from a different perspective than most of the non-user firms.

Of course, having a sustaining or proactive environmental strategy does not necessarily guarantee that any one initiative will be adopted. In the case of this study, two non-user firms had proactive environmental strategies but did not use GE at the time of the study. For one of these two firms, existing GE proposals have not yet met its criteria which include that the GE should be locally sourced and the electrons preferably received directly. And for the other firm, the suitability of GE for the firm had not yet been tested because at the time of the study a GE purchase had not yet been brought to the attention of the firm’s decision-makers by an internal champion.

In the end, the environmental issues related to GE were virtually the same for all the firms included in the study. However, it was the different organizational perspectives used by most of the user firms that made it a more salient issue for them. This suggests that the factors influencing the salience of an initiative may run deeper than the issue itself.

A final important discovery made by this study is that it demonstrates how different initiatives may have unique factors that influence how they are interpreted by firms. In the case of GE, location, a financial business connection to the GE industry and the personal GE experience level of either the champion or decision-maker influenced the willingness of firms to adopt the initiative. Although it is often the goal of academic studies to attempt to generalize phenomenon such as the voluntary adoption of environmental initiatives, it is important to recognize that individual initiatives may have specific factors that lie outside of generic models. While more research needs to be conducted on initiatives with properties similar to GE before it can be known just how unique the above mentioned factors are to it, it should at least be clear

that one should be cautious when using generalizations derived from broad strategic observations when studying factors that influence specific initiatives.

#### **4.6 Policy Implications**

Despite continuing improvements in GE technology, it is perhaps unrealistic to expect these improvements to be sufficient enough in the near future to completely overcome the numerous external factors and organizational factors currently inhibiting its voluntary adoption by businesses. Given this argument, it is likely that GE will continue to need government support for some time, or it will need existing government support for competing technologies to be removed, before it can call itself a financially self-sustaining industry. However, as has been shown in this study, some firms are willing to voluntarily adopt GE today as a means to demonstrate their proactive response to a broader set of environmental issues. For policymakers and GE advocates interested in promoting this initiative to such firms, it is in their interest to seek programs that will further legitimate its use as a proactive means to improve a firm's environmental performance. The obvious place to start as a means to legitimate its use is to develop a program that publicly recognizes companies that voluntarily adopt GE. At the time of the study the only recognition programs in Canada are the ones that are administered by the electricity retailers selling GE. Although a recognition program that was sponsored by the Government of Canada and run by Friends of the Earth (FOE) did exist from 2002 to 2003, it was eventually "mothballed" by FOE because of a lack of funding and unstable provincial GE policies.

In the United States, the Environmental Protection Agency (EPA) has been running a reasonably successful recognition program called the Green Power Partnership since 2001. Now in its fourth year, the program has 563 "partners" that voluntarily use 2.5 million MWh of GE annually. This means that on average each of the 563 companies is demanding over 4400 MWh of GE<sup>15</sup>. This figure is particularly impressive when one considers that of the ten user firms that participated in this study, the most GE used by any company was 2,000 MWh annually.

The benefits of instituting a GE recognition program in Canada are twofold. First, it will help to raise the public profile of GE and thereby increase its public relations value for firms. Secondly, it provides potential and existing internal GE champions with a tangible instrument to legitimize the initiative within their firm, something which this study has shown to be an important influence on firms considering to voluntarily adopt the initiative.

Of course, a government supported recognition program is only one of a number of different initiatives that could be implemented to support the development of GE. Other

initiatives include renewable portfolio standards, greenhouse gas emissions trading, and feed-in tariffs (i.e., a mandated minimum purchase price for electricity generated from green sources), to name just a few potential policy options. However, as this thesis is interested in the voluntary demand for GE by businesses, I have limited the discussion to demand side GE policy implications that are supported by the study's findings.

Looking beyond GE, this study has also shown the important role that non-financial decision-making instruments and processes that facilitate continual environmental improvement play in legitimizing a voluntary environmental initiative that has no clear competitive advantage or external pressure associated with its adoption. In light of this, policies intended to improve the long-term sustainability of firms should include programs that improve the capability of companies to use non-financial factors as part of the decision-making process. This in turn will help companies to look at environmental issues from potentially new perspectives and assist environmental champions to legitimize a broader range of voluntary initiatives. The long-term benefits of such a program could certainly extend well beyond GE and potentially make the adoption of future voluntary environmental initiatives more straightforward.

Existing legislation that requires large Canadian financial and insurance companies to publish annual public accountability reports is an example of an initiative that has both increased non-financial decision-making capabilities and has led to improved performance. In my interviews with representatives of the financial industry, the public accountability requirement was specifically identified by most of the participants as an instrument that has improved not only their communication of social and environmental issues but it has also acted as an impetus for the adoption of more proactive strategies within the financial industry.

In terms of financial incentives that can motivate more firms to adopt GE, most of the user and non-user firms that participated in the study were wary of using aggressive tax incentives or rebates as a means to narrow the premium price gap between conventional electricity and GE. Although a number of the participants did not object to small financial incentives, they did not necessarily think that this was the best use of government funds to support GE development. This sentiment was particularly strong with the non-user firms and is therefore an indication that such measures would not necessarily entice them to adopt GE. One financially related incentive that was supported by some of the participants was the use of tradable carbon credits that could be earned from buying GE. However, reaction to this initiative was mixed as some participants saw this as a means for heavy polluters to continue with their existing processes.

Given the findings of this study, it seems reasonable to suggest that the best sustainable policy strategy to encourage firms to voluntarily adopt environmental initiatives that are good for the environment but not necessarily good for the firm from a financial perspective is to develop decision-making processes that take the non-financial benefits of such initiatives into account. By focusing on organizational decision-making capabilities, government and environmental advocates are not only planting the seeds for continual environmental improvement but are also potentially providing internal champions with the necessary tools to legitimize a wide array of environmental issues.

#### **4.7 Conclusion**

Research on the environmental performance of firms has shown that most environmental processes and initiatives adopted by businesses are intended to improve their competitiveness or legitimation. This study sought to develop an understanding of the factors that influence some firms to adopt initiatives that are good for the environment but do not necessarily improve their competitiveness or legitimation. Green electricity was used by the study as a means by which to explore this issue because while it improves a company's environmental performance, it increases its costs, does not improve corporate efficiency, and has relatively little external pressure associated with its use.

In order to develop a better understanding of the phenomenon, this study used an exploratory research approach to conduct a comparative investigation of the factors that promote and inhibit the voluntary adoption of GE by Ontario-based businesses. The research found that the voluntary adoption of GE by businesses demonstrates the important role that individuals within a firm play in the successful adoption of voluntary environmental initiatives. An important aspect of this success is the ability of the individual to attach her personal interest to a tangible business issue. This task is in turn aided by proactive or sustaining corporate environmental strategies that formalize continual environmental improvement processes and are predisposed to evaluating the success of an initiative on more than its financial or legitimizing contribution to the firm.

Given the findings of this study, it appears that before more businesses can be expected to voluntarily adopt initiatives that are good for the environment but are not necessarily good for the firm, they will need to develop norms and values that extend beyond the bottom-line. Once this is done, how far these firms are willing to go is unknown. The critical moment, in terms of sustainability, will occur when a firm is equally unwilling to improve its financial, environmental, or social performance if it is done at the expense of at least one of the other two measures.

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